CHIROPTERA OF THE GREAT SMOKY MOUNTAINS: BIBLIOGRAPHY WITH INDEXES BY SPECIES AND MAJOR SUBJECT AREAS

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CHIROPTERA OF THE GREAT SMOKY MOUNTAINS:

BIBLIOGRAPHY WITH INDEXES BY SPECIES

AND MAJOR SUBJECT AREAS

Research/Resources Management Report SER-56

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ABSTRACT

Of the 40 species of bats known to occur within the United States, 15 occur within Tennessee and/or North Carolina and 10 species occur within the Great Smoky Mountains National Park. This bibliography was an attempt to document much of the literature concerning bat research and species occurrence in the park and surrounding southeastern states. The bibliography cites approximately 235 books, theses, journal articles, and pieces of correspondence; these cover 117 years, from 1864 to 1981, and are primarily ecological in nature. The majority of the literature was obtained from major scientific journals and from the files and library facilities of the author, the University of Tennessee, and the Tennessee Valley Authority. In addition to the bibliography, two indexes were constructed to allow the reader a quick and efficient means of locating references for particular bat species and/or major subject areas.

ACKNOWLEDGEMENTS

I would like to thank the Great Smoky Mountains Natural History Association for its support of the work reported here. The present report is one of a series of bibliographies being developed for the biota, soils, geology, and environment of Great Smoky Mountains National Park. The need for such a series was first expressed by a committee made up of representatives from the Interpretation and Resources Management Divsions of Great Smoky Mountains National Park and the Uplands Field Research Laboratory. Peter White of Uplands Laboratory supervised the project.

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INTRODUCTION

Approximately 40 species of bats are known to occur in the United States (Barbour and Davis 1969, Mohr 1976). Of these, 15 (38 percent) occur in Tennessee and/or North Carolina and 10 (25 percent) occur in Great Smoky Mountains National Park (GRSM) (Table 1). Despite this fact, very little research has been conducted on bats in the southeastern United States. Although the primary objective of this bibliography was to document the literature concerning bat research in GRSM and the surrounding southeastern states, it became necessary to broaden the scope of the project. Many species of bats, like birds, can undergo seasonal migrations. Banded individuals of species such as the Little Brown bat (Myotis lucifugus) and the Indiana bat (M. sodalis) have been recaptured 290 to 300 miles away from their original capture points (Barbour and Davis 1969). Therefore, when dealing with the ecology of such animals, it became necessary to consider the literature of each species from a broad geographic range. Finally, some books (Table 2) were included in the bibliography because they were considered to be important to the overall topic of bat ecology.

Due to the plethora of literature concerning most temperate bat species, it would be incorrect to assume that this bibliography is complete for any of those species. In order to maintain some constraints on the size of the bibliography, most of the literature that has been included is ecological in nature. Literature concerning laboratory-oriented research in areas such as cytology and genetics, for example, was sharply curtailed although not completely eliminated. Furthermore, a sufficient number of general and review papers have been incorporated so that one may obtain additional references by using these general references.

Table 1. Bat species that occur within the Great Smoky Mountains National Park and the states of Tennessee and North Carolina.

SPECIES	GRSM	TENN	N. CAROLINA
Eptesicus fuscus - Big Brown Bat	x	x	x
Lasionycteris noctivagans - Silver-Haired Bat	x	x	x
Lasiurus borealis - Red Bat	x	x	x
Lasiurus cinereus - Hoary Bat[1]	x	x	x
Lasiurus seminolus - Seminole Bat			x
Myotis austroriparius - Southeastern Bat		x	x
Myotis grisescens - Gray Bat[2]		x	
Myotis keenii - Keens Bat	x	x	x
Myotis leibii - Least Bat[3]	x	x	x
Myotis lucifugus - Little Brown Bat	x	x	x
Myotis sodalis - Indiana Bat[4]	x	x	x
Nycticeius humeralis - Evening Bat		x	x
Pipistrellus subflavus - Tri-Colored Bat	x	x	x
Plecotus rafinesquii - Southern Big-Eared Bat	x	x	x
Tsarida brasiliensis - Mexican Free-Tailed Bat[5]			x

[1]Never officially collected in GRSM but most likely occurs there.

[2]Federally endangered species

[3]Deemed in need of management by the State of Tennessee and of special concern by the Tennessee Heritage Program

[4]Federally endangered species

[5]Recent documented range expansion into N. Carolina (Lee and Marsh, 1978)

Table 2. Major books of reference concerning bats.

BATS by G. M. Allen. Dover Publications, New York. 1967. 368 pp.

BIOLOGY OF BATS by W. A. Wimsatt, Academic Press, London. 1970.

THE LIVES OF BATS by D. W. Yalden and P. A. Morris. Quadrangle/The New York Times Book Co. 1975. 247 pp.

ABOUT BATS: A CHIROPTERAN SYMPOSIUM edited by B. H. Slaughter and D. W. Walton. Southern Methodist University Press, Dallas. 1970. 339 pp.

LISTENING IN THE DARK by D. R. Griffin. Dover Publications, New York. 1974. 413 pp.

THE WORLD OF THE BAT by C. E. Mohr. J. B. Lippincott Co., New York. 1976. 162 pp.

BATS OF AMERICA by R. W. Barbour and W. H. Davis. University Press Kentucky. 1969. 286 pp.

THE WORLD OF BATS by A. Novick and N. Leen. Holt, Rinehart, New York. 1970.

Our basic approach in constructing the bibliography and the two indexes was historical in nature. Many of the early, classic papers, which are still relevant today, are included, along with the most recent and more sophisticated research. Thus, the bibliography cites approximately 235 books, theses, journal articles, and pieces of correspondence; these cover 117 years, from 1864 to 1981.

METHODS

Much of the literature in this bibliography came from the files of the author. In addition, the library facilities of the University of Tennessee, Knoxville, and the Tennessee Valley Authority were also used. Records of bat species found within GRSM were obtained from the mammal collection at the University of Tennessee Zoology Department, from Linzey and Linzey (1971), and from the author's personal files.

The major journals that were reviewed for bat literature included Wildlife Review, Journal of Wildlife Management, Journal of Mammalogy, Ecology, and Bat Research News. Other journals that occasionally contained relevant articles included Journal of Wildlife Diseases, American Naturalist, American Journal of Anatomy, Journal of Experimental Biology, Journal of Behavioral and Ecological Sociobiology, and Journal of Morphology.

The bibliography was arranged alphabetically by author. This was the easiest and quickest method and is standard practice for most major journals. In addition to the bibliography, two indexes were constructed to give the reader a quick and efficient means of locating references for particular bat species and/or major subject areas. The references within each index are also arranged alphabetically by author for each bat species and subject area. Thus, the most efficient use of this bibliography would be to go directly to the

indexes for the particular bat species and subject area that is being investigated. The references which are found in both places would be the most worthwhile to initially locate in the bibliography.

TAXONOMIC CHANGES

There are several taxonomic changes that may be confusing within the bibliography. The Southern Big-eared bat (Plecotus rafinesquii) was previously known as Corynorhinus rafinesquii, the Least bat (Myotis leibii) was once Myotis subulatus, and the Mexican Free-tailed bat (Tadarida brasiliensis) was once Tadarida mexicana.

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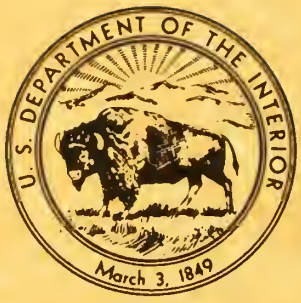
SEX RATIOS: Davis 1959, Elder and Gunier 1978, Tinkle and Milstead 1960.

SUMMER COLONIES: Cagle and Cockrum 1943, Christian 1956, Davis et al. 1965, Humphrey et al. 1977a & b, Krutzsch 1961, Laidlow and Fenton 1971, Rabinowitz and Tuttle 1980.

SURVIVAL AND MORTALITY: Beer 1955, Deblase et al. 1965, Geluso 1976, Herreid 1967, Keen and Hitchcock 1980, Kunz 1974, Kunz et al. 1977, Tuttle 1976b, Tuttle and Stevenson 1977.

SWARMING: Cope and Humphrey 1977, Davis 1964b.

THERMOREGULATION: Davis and Reite 1967; Henshaw and Folk 1966; Herreid and Schmidt-Nielson 1966; Hock 1951; Hurst and Wiebers 1967, 1968; McManus 1974; Rabinowitz 1981; Stones and Wiebers 1965; Twente and Twente 1964.



As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environment and cultural value of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.